



Edgewood Area - Aberdeen Proving Ground, Maryland 21010-5424

U.S. Army Soldier and Biological Chemical Command

Joint Service Modular Decontamination System M21 DP/M22 HPW

The Modular Decontamination System (MDS) program was initiated to provide the soldier with a vastly improved capability to perform detailed equipment decontamination on the battlefield. The Army's experience during *Operation Desert Storm* validated the need for a more deployable system and for the more efficient use of water, a scarce resource in an arid environment.



Soldiers currently conduct thorough (detailed) equipment decontamination using the aging M12A1 Power Driven Decontamination Apparatus with mops and brooms, or with the small portable M11 and M13 Decontamination Apparatus. These methods are very time consuming and labor intensive.

The new system includes an M21 Decontaminant Pumper and an M22 High-Pressure/Hot Water module. These modules improve the method of decontaminant application by reducing water usage and equipment processing time. The system is also less labor intensive and improves decontamination effectiveness. Both modules are diesel powered with electrical start capability.

- The M21 Decontaminant Pumper dispenses DS2 or liquid field expedient decontaminants, formalin, household bleach, and diesel fuel through two spray wands. While mounted on a trailer, the M21 draws the decontaminant from a container on the ground. Accessories to the M21 include hoses and trigger-operated spray wands.

- The M22 High Pressure Washer (HPW) delivers hot pressurized water up to 3,000 psi at a rate of 5 gpm through two spray wands. This washer can also dispense a high-volume (40 gpm) flow of cold water and, through an injector, liquid detergents. Its accessories include the necessary hoses, wands, nozzles, hydrant adapters, and injector. The M22 high-pressure/hot water module can draw water from natural water sources and dispense it at variable adjustable pressures, temperatures, and flow rates. The hydrant adapters provide a capability for using urban water supplies. It, like the M21, can also be operated from a trailer.

The MDS (one M21 and two M22) modules will be supported by Associated Support Items of Equipment (ASIOE), including two 3,000-gal self-supporting collapsible water tanks, a 125-gpm diesel-powered water pump, and 3/4-ton trailers. The MDS and components will equip the decontamination line at a Detailed Equipment Decontamination Site at the three stations described in Army Field Manual (FM) 3-5 and Fleet Marine Force Manual (FMFM) 11-10. Each module (M21 or M22) may be transported or operated from a 3/4-ton trailer towed by the M56 Mechanized Smoke Generating System.

The MDS will be fielded to the dual purpose smoke/chemical companies to conduct detailed equipment decontamination, replacing the M12A1 Skid Mounted Decon Apparatus; and for operational decontamination, replacing the M17 Lightweight Decontamination System. Chemical companies will use the MDS to fulfill the decontamination requirements of the initial wash, decontaminant application, and rinse steps of detailed equipment decontamination as described in FM 3-5, NBC Decontamination. Non-chemical units may be provided components of the MDS, the M22 HPW, for operational decontamination operations.

Key Requirements:

- Provide a decontaminant pumper module (M21) to mechanically dispense DS2 and liquid field expedient decontaminants.
- Provide two high-pressure/hot water modules (M22) for primary washing and rinsing process for detailed equipment decontamination and operational decontamination to limit the transfer and spread of contamination. It also provides a capability to adapt to theater hydrant water supplies for urban decontamination.
- Fulfill the decon requirements of the initial wash, decontaminant application, and rinse steps of detailed equipment decontamination as described in FM 3-5, NBC Decontamination, with the existing TOE and ASIOE equipment.

Battle Lab Applicability:

- Direct reduction in logistical and personnel labor burden in the application of the decontaminant.
- Significant reduction in water usage, particularly important in a vast desert environment. Additionally, the MDS is faster and more efficient than currently fielded systems.

Major Milestones:

Operational Requirements Document: Jun 93

Type Classified-Standard: Dec 98

Production Contract Award: FY99

First Unit Equipped: FY02

Initial Operational Capability: FY03

Estimated Unit Cost:

M21: \$19,000

M22: \$15,000

ASIOE: 3,000-gal water tank	\$ 1,800
125-gpm pump	\$ 1,700
3/4 ton trailer	\$11,000



For additional information, please contact Product Manager-Decontamination and Decontamination Systems, ATTN: AMSSB-PM-RNN-O, Aberdeen Proving Ground, MD 21010-5424. The Product Manager can also be contacted by E-mail (pm.ods@sbccom.apgea.army.mil), by telephone at (410) 436-2804 or DSN 584-2804, or by fax to (410) 436-8803.